

SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT:

Langbos Citrus, Sundays River Valley Municipality
(DEDEAT Reference Number: EC06/C/LN2/M/51-2014)

PART B: DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

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Abbreviations

CARA – Conservation of Agricultural Resources Act
CEMPr – Construction Phase Environmental Management Programme
DAFF – Department of Agriculture, Forestry and Fisheries
DEDEAT – Department of Economic Development, Environmental Affairs and Tourism
DWS – Department of Water and Sanitation
ECO – Environmental Control Officer
EIA – Environmental Impact Assessment
EMPr – Environmental Management Programme
EA – Environmental Authorisation
OEMPr – Operational Phase Environmental Management Programme

Definitions

"EIA Regulations" - these are the Environmental Impact Assessment Regulations published in Government Notice R. 543 of 18 June 2010 in terms of Chapter 5 of the National Environmental Management Act, Act 107 of 1998.

"The Department" - The Department of Economic Development, Environmental Affairs and Tourism, Eastern Cape Province.

"Commencement" - Any physical activity on site that can be viewed as associated with the clearing and site preparation phase.

1.1 INTRODUCTION AND BACKGROUND

The applicant, BF Joubert Familie Trust, is proposing to clear approximately 255 ha of vegetation for the phased establishment of citrus orchards and associated activities on three adjoining properties, which measure approximately 586,13 hectares in extent, namely:

- Portion 343 Commando Kraal No 113 (71.29 ha)
- Portion 276 of Farm Commando Kraal No 113 (350.37 ha) and
- Remainder of the Farm Vellore Outspan No 153 (164.47 ha)

The proposed agricultural development will include the establishment of approximately 220ha of citrus orchards and 35ha of associated infrastructure (internal roads, dam and water supply infrastructure, lay-down areas and windbreaks) totaling a development area of approximately 255 ha. The proposed vegetation clearing associated with the proposed agricultural development is proposed to be undertaken in three phases as follows:

- Phase 1: Clearance of ~37ha of vegetation on Portion 343 of Farm 113 for the establishment of ~34ha of citrus orchards.
- Phase 2: Clearance of ~94ha of vegetation on Portion 276 of Farm 113 for the establishment of ~82ha of citrus orchards.
- Phase 3: Clearance of ~113ha of vegetation on Portion 276 of Farm 113 for the establishment of ~104ha of citrus orchards.

The orchard development area is therefore proposed to be approximately 244ha. This will include areas required for roads, windbreaks and lay-down areas. An additional approximately 11ha will be required for the establishment of the dam and associated irrigation infrastructure as well as the Logistical Services area and associated infrastructure (access road, turning circle etc). Thus, the total development footprint is anticipated to be approximately 255ha.

The applicant proposes to construct a dam with a total capacity of ~50 000m³ and a footprint of approximately 2.24ha (140m x 160m x 2.2m) on Portion 343 of Farm 113 in parallel with the vegetation clearing associated with Phase 1. The dam is proposed to be located adjacent to the existing manager's house and storage shed, in an area which is currently planted with lucerne.

The project will also include the construction of a logistical services/ handling area of approximately 4 200m². This will consist of a storage shed/s for the storage of tractor trailers, chemicals, and an administration/ office area, the total building dimensions of which will be approximately 30m x 25m (750m²) as well as a suitably surfaced/paved area which is required for delivery and collection of products via tractor-trailer and trucks, associated with the agricultural activities (plastic crates, wooden pallets, collection of citrus). Associated infrastructure includes water, sanitation and effluent management.

The vegetation clearing associated with the proposed agricultural development is anticipated to be undertaken in three phases. It is estimated that each phase of clearing, site preparation and orchard establishment will take approximately 12 months. Activities to be undertaken during the "construction" phase include the following:

- clearing of indigenous vegetation
- landscaping and levelling of the site
- establishment of unpaved internal roads
- construction of a balancing dam (on Portion 343 of Farm 113)

- installation of water reticulation and irrigation infrastructure (from the canal offtake point on Portion 343 of Farm 113 and within the orchards)
- planting of citrus orchards and establishment of windbreaks
- construction of a logistical services/handling area
- construction of lay down areas
- access road upgrading/ construction
- construction of logistical services/ handling facilities:
 - In the long term (approximately three years) the project will require the construction of an area of approximately 4 200m², for logistical services/ handling. This will consist of a storage shed/s for the storage of tractor trailers, chemicals, and an administration/ office area, the total building dimensions of which will be approximately 30m x 25m (750m²), as well as, a suitably surfaced/paved area which is required for delivery and collection of products via tractor-trailer and trucks, associated with the agricultural activities (plastic crates, wooden pallets, collection of citrus). Associated infrastructure includes water, sanitation and effluent management.

Prior to the construction of the logistical services area and for the first phase of the development, the applicant proposes to use an existing storage shed and managers house on Portion 343 Commando Kraal No 113 for storage and handling purposes.

In terms of the National Environmental Management Act (Act no 107 of 1998), as amended (NEMAA), and the NEMA EIA regulations, 2010 published in Government Notice R 543, 544, 545 and 546 on the 18 June 2010 in Government Gazette 33306 (as amended), the project requires full Scoping and Environmental Impact Assessment prior to the commencement of any activities on the site. As per the Transitional Arrangements of the 2014 EIA Regulations, Chapter Four of the EIA Report lists activities in the 2010 regulations similarly listed in the 2014 regulations, as well as any newly listed activities in terms of the 2014 EIA Regulations triggered by the project, which require assessment.

1.1.1 Activities and Regulations for which Application has been made:

DEDEAT Reference Number EC06/C/LN2/M/51-2014
Applicant BF Joubert Familie Trust
Location of Activity Near Addo in the Sundays River Valley Municipality, the following farm portions collectively known as Langbos: <ul style="list-style-type: none"> • Portion 343 Commando Kraal No 113 (71.29 ha) • Portion 276 of Farm Commando Kraal No 113 (350.37 ha) and • Remainder of the Farm Vellore Outspan No 153 (164.47 ha)
Activity Description The proposed agricultural development will include the establishment of approximately 220ha of citrus orchards and 35ha of associated infrastructure (internal roads, dam and water supply infrastructure, lay-down areas and windbreaks) totaling a development area of approximately 255 ha. The proposed vegetation clearing associated with the proposed agricultural development is proposed to be undertaken in three phases as follows:

- Phase 1: Clearance of ~37ha of vegetation on Portion 343 of Farm 113 for the establishment of ~34ha of citrus orchards.
- Phase 2: Clearance of ~94ha of vegetation on Portion 276 of Farm 113 for the establishment of ~82ha of citrus orchards.
- Phase 3: Clearance of ~113ha of vegetation on Portion 276 of Farm 113 for the establishment of ~104ha of citrus orchards.

The proposed development will entail the following activities on the site:

- clearing of indigenous vegetation
- landscaping and levelling of the site
- establishment of unpaved internal roads
- construction of a balancing dam (on Portion 343 of Farm 113; ~50 000 m³)
- installation of water reticulation and irrigation infrastructure (from the canal offtake point on Portion 343 of Farm 113 and within the orchards)
- planting of citrus orchards and establishment of windbreaks
- construction of a logistical services/handling area
- construction of lay down areas
- access road upgrading/ construction
- construction of logistical services/ handling facilities:
 - In the long term (approximately three years) the project will require the construction of an area of approximately 4 200m², for logistical services/ handling. This will consist of a storage shed/s for the storage of tractor trailers, chemicals, and an administration/ office area, the total building dimensions of which will be approximately 30m x 25m (750m²), as well as, a suitably surfaced/paved area which is required for delivery and collection of products via tractor-trailer and trucks, associated with the agricultural activities (plastic crates, wooden pallets, collection of citrus). Associated infrastructure includes water, sanitation and effluent management.
- Once suitably prepared it is proposed that the orchards will be utilised for the cultivation of various citrus varieties.
- Equipment required for the new operations will be stored in the storage sheds to be constructed.
- Water for the development will be supplied from the Sundays River Water Users Association's canals. The offtake point will be located on Portion 343 of Farm 113 and the irrigation water will be reticulated, via a pipeline up to a reservoir on Portion 276 of Farm 113, wherefrom it will be reticulated under gravity into the orchards.
- It is estimated 230 additional seasonal (8 months of the year) and 23 permanent employment opportunities will be created by the project.
- Citrus will be transported off the site by tractor trailer and/ or a transport company for processing by a contracted local Packhouse

Listed Activities

NEMA EIA Regulations 2010 (as amended)	2014 EIA Regulation as of 8 December 2014	Project Component
GN R544 (Listing Notice 1)	GN R 983 (Listing Notice 1)	
<p>8. <i>The construction of a hatchery or agri-industrial infrastructure outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.</i></p>	<p>8. <i>The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.</i></p>	<p>The project will include the construction of a logistical services/ handling area of approximately 4 200m². This will consist of a storage shed/s for the storage of tractor trailers, chemicals, and an administration/ office area, the total building dimensions of which will be approximately 30m x 25m (750m²) as well as a suitably surfaced/paved area which is required for delivery and collection of products via tractor-trailer and trucks, associated with the agricultural activities (plastic crates, wooden pallets, collection of citrus).</p> <p>This area will however not be rezoned to agri-industrial and it will not be used for the beneficiation of any agricultural products. The primary use of the logistical services area is to provide support associated with the agricultural activities (citrus orchards).</p> <p>Due to the above this listed activity is deemed not to apply to this component of the project and environmental authorisation is not required.</p>
<p>11. <i>The construction of:</i> <i>(xi) infrastructure or structures covering 50 square metres or more</i></p> <p><i>where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</i></p>	<p>12. <i>The development of—</i> <i>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</i></p> <p><i>where such development occurs—</i> <i>(a) within a watercourse;</i> <i>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</i></p>	<p>There are two drainage lines on the property; access to the orchards will be required through the drainage lines. The establishment of vehicle tracks through the watercourse for the construction and the operational phase will be required. It is anticipated that the vehicle tracks through the watercourse will be approximately 5 meters wide and dependent on the number of crossings the total development footprint for all crossings is anticipated to exceed 100 square metres or more.</p> <p>This listed activity therefore requires environmental authorisation.</p>

<p>12. The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more</p>	<p>13. The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.</p>	<p>The applicant proposes to construct a dam with a total capacity of ~50 000m³ and a footprint of approximately 2.24ha (140m x 160m x 2.2m) on Portion 343 of Farm 113 in parallel with the vegetation clearing associated with Phase 1. The dam is proposed to be located adjacent to the existing manager's house and storage shed, in an area which is currently planted with lucerne.</p> <p>This listed activity therefore requires environmental authorisation.</p>
<p>18. The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: (i) a watercourse;</p>	<p>19. The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from - (i) a watercourse;</p>	<p>There are two drainage lines on the property; access to the orchards will be required through the drainage lines. The establishment of vehicle tracks through the watercourse for the construction and the operational phase will be required. This could result in the infilling or depositing or removal of material of more than 5m³ from a watercourse.</p> <p>This listed activity therefore requires environmental authorisation.</p>
<p>22. The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or...</p>	<p>24. The development of – (ii) a road with a reserve wider than 13.5 meters, or where no reserve exists where the road is wider than 8 meters;</p>	<p>It is anticipated that existing informal internal vehicle tracks/ roads within the properties may be widened and/or lengthened, and where none exist construction will be required, to accommodate trucks and tractors. These internal services roads are anticipated to be no more than 5 meters wide.</p> <p>The preferred width of the roads near the main intersections with the MR450 and entrances to the development should be at least 8m wide. The internal radii of the circulation road around the logistical services area shall preferably be 18m or bigger as far as practical possible to accommodate the effective flow of heavy traffic.</p> <p>The properties fall outside of an urban area.</p> <p>This listed activity therefore requires environmental authorisation.</p>

<p>47. The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres – excluding widening or lengthening occurring inside urban areas.</p>	<p>58. The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre – (i) where the existing reserve is wider than 13.5 metres; or (ii) where no reserve exists, where the existing road is wider than 8 metres</p>	<p>It is anticipated that existing roads within and linking the properties may require widening or lengthening. However, none of the existing internal roads which may be widened or lengthened are currently wider than 8 metres. The properties fall outside of an urban area.</p> <p>Due to the above this listed activity is deemed not to apply to this component of the project and environmental authorisation is not required.</p>
<p>GN R545 (Listing Notice 2)</p>	<p>GN R984 (Listing Notice 2)</p>	
<p>16. The physical alteration of virgin soil to agriculture, or afforestation for the purposes of commercial tree, timber or wood production of 100 hectares or more.</p>	<p>13. The physical alteration of virgin soil to agriculture, or afforestation for the purposes of commercial tree, timber or wood production of 100 hectares or more.</p>	<p>The applicant proposes to clear 300 ha for the establishment of 230 ha of citrus orchards and associated infrastructure. This is the primary listed activity requiring Scoping and Environmental Assessment prior to commencement of activities on site.</p> <p>This listed activity will require environmental authorisation.</p>
<p>Not listed in GN R 545</p>	<p>15. The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for -</p>	<p>The applicant proposes to clear 300 ha for the establishment of 230 ha of citrus orchards and associated infrastructure.</p> <p>This listed activity will require environmental authorisation.</p>
<p>GN R546 (Listing Notice 3)</p>	<p>GN R 985 (Listing Notice 3)</p>	
<p>2. The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres. a) In Eastern Cape... iii. Outside urban areas, in: (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;</p>	<p>2. The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres. (b) In Eastern Cape: (iii) Outside urban areas, in: (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans. (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of biosphere reserve;</p>	<p>The applicant proposes to construct a dam with a total capacity of ~50 000m³ and a footprint of approximately 2.24ha (140m x 160m x 2.2m) on Portion 343 of Farm 113 in parallel with the vegetation clearing associated with Phase 1. The dam is proposed to be located adjacent to the existing manager's house and storage shed, in an area which is currently planted with lucerne.</p> <p>The dam site falls outside of an urban area and a portion thereof has been identified as BLMC2 in terms of the ECBCP. The area identified for the placement of the proposed dam is approximately</p>

		<p>1.5km from the nearest boundary of the Addo Elephant National Park.</p> <p>This listed activity will require environmental authorisation.</p>
<p>4. <i>The construction of a road wider than 4 metres with a reserve less than 13,5 metres.</i></p> <p>(a) <i>In Eastern Cape...</i></p> <p>ii. <i>Outside urban areas, in:</i></p> <p>(ee) <i>Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p>(gg) <i>Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve.</i></p>	<p>4. <i>The development of a road wider than 4 meters with a reserve less than 13.5 meters.</i></p> <p>(b) <i>In Eastern Cape:</i></p> <p>(ii) <i>Outside urban areas, in:</i></p> <p>(ee) <i>Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.</i></p> <p>(gg) <i>Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of biosphere reserve;</i></p>	<p>It is anticipated that existing informal internal vehicle tracks/ roads within the properties may be widened and/or lengthened, and where none exist construction will be required, to accommodate trucks and tractors. These internal services roads are anticipated to be no more than 5 meters wide.</p> <p>The preferred width of the roads near the main intersections with the MR450 and entrances to the development should be at least 8m wide. The internal radii of the circulation road around the logistical services area shall preferably be 18m or bigger as far as practical possible to accommodate the effective flow of heavy traffic.</p> <p>The properties under assessment fall outside of an urban area within the Eastern Cape. Portions of the property have been identified as BLMC1 and BLMC2 in terms of the ECBCP. Portions of the proposed development area are located approximately 200m from the nearest boundary of the Addo Elephant National Park.</p> <p>This listed activity will require environmental authorisation.</p>
<p>10. <i>The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.</i></p> <p>(a) <i>In Eastern Cape..</i></p> <p>ii. <i>Outside urban areas, in:</i></p> <p>(ee) <i>Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p>	<p>10. <i>The development of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.</i></p> <p>(b) <i>In Eastern Cape:</i></p> <p>ii. <i>Outside urban areas, in:</i></p> <p>(ee) <i>Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p>	<p>The project requires the construction of a logistical services area, which will include a storage shed/s. The storage facility will provide for the secure storage and handling of agricultural chemicals, and will comply with the requirements of various sustainable farming accreditations to which the company adheres. The total volume of chemicals to be stored on site is anticipated to be less the 25m²/ 25m³. Chemicals are not stored in bulk on site but are ordered and delivered on a needs basis.</p>

<p><i>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve.</i></p> <p><i>(ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined;</i></p>	<p><i>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve;</i></p> <p><i>(ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; or</i></p>	<p>The properties under assessment fall outside of an urban area within the Eastern Cape. Portions of the property have been identified as BLMC1 and BLMC2 in terms of the ECBCP. The logistical services area is located approximately 1km from the nearest boundary of the Addo Elephant National Park.</p> <p>Due to the above this listed activity is deemed not to apply to this component of the project and environmental authorisation is not required.</p>
<p><i>12. The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</i></p> <p><i>(a) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</i></p>	<p><i>12. The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p><i>(a) In Eastern Cape</i></p> <p><i>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004.</i></p>	<p>The study site includes vegetation identified as Albany Alluvial Vegetation which has been listed in terms of section 52 of the NEMBA as an Endangered ecosystem. However, it has been determined by the vegetation specialist that none of this vegetation type is proposed to be transformed as part of this proposed development.</p> <p>Due to the above this listed activity is deemed not to apply to this component of the project and environmental authorisation is not required.</p>
<p><i>13. The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation</i></p> <p><i>a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority.</i></p> <p><i>(c) In Eastern Cape ...</i></p> <p><i>ii. Outside urban areas, the following:</i></p> <p><i>(ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;</i></p>	<p><i>Not similarly listed</i></p>	<p>The applicant proposes to clear 300 ha for the establishment of 230 ha of citrus orchards and associated infrastructure. It is anticipated that more than 75% thereof will be indigenous.</p> <p>The properties under assessment fall outside of an urban area within the Eastern Cape. Portions of the property have been identified as BLMC1 and BLMC2 in terms of the ECBCP. Portions of the proposed development area are located approximately 200m from the nearest boundary of the Addo Elephant National Park.</p> <p>This listed activity will require environmental authorisation.</p>
<p><i>14. The clearance of an area of 5 hectares or more of vegetation where 75% or more of the</i></p>	<p><i>Not similarly listed</i></p>	<p>The applicant proposes to clear 300 ha for the establishment of 230 ha of citrus orchards and associated infrastructure.</p>

<p><i>vegetative cover constitutes indigenous vegetation, ...</i> <i>(a) In Eastern Cape, ...</i> <i>i. All areas outside urban areas.</i></p>		<p>It is anticipated that more than 75% thereof will be indigenous.</p> <p>The proposed site falls within the Eastern Cape and outside an urban area.</p> <p>This listed activity will require environmental authorisation.</p>
<p><i>16. The construction of:</i> <i>(iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</i> <i>(a) In Eastern Cape...</i> <i>ii. Outside urban areas, in:</i> <i>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i> <i>(hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;”</i></p>	<p><i>14. The development of—</i> <i>(xii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—</i> <i>(a) within a watercourse;</i> <i>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</i> <i>(c) In Eastern Cape:</i> <i>ii. Outside urban areas, in:</i> <i>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i> <i>(hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; or</i></p>	<p>There are two drainage lines on the property; access to the orchards will be required through the drainage lines. The establishment of vehicle tracks through the watercourse for the construction and the operational phase will be required. It is anticipated that the vehicle tracks through the watercourse will be approximately 5 meters wide and dependent on the number of crossings the total development footprint for all crossings is anticipated to exceed 10 square metres or more.</p> <p>The properties under assessment fall outside of an urban area within the Eastern Cape. Portions of the property have been identified as BLMC1 and BLMC2 in terms of the ECBCP. One of the drainage lines is located approximately 900m from the nearest boundary of the Addo Elephant National Park.</p> <p>This listed activity therefore requires environmental authorisation.</p>
<p><i>19. The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</i> <i>(a) In Eastern Cape...</i> <i>ii. Outside urban areas, in:</i> <i>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i> <i>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in</i></p>	<p><i>18. The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</i> <i>(b) In Eastern Cape:</i> <i>ii. Outside urban areas, in:</i> <i>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i> <i>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of</i></p>	<p>It is anticipated that existing roads within and linking the properties may require widening or lengthening to accommodate trucks and tractors. These internal services roads are anticipated to be no more than 5 meters wide.</p> <p>The properties under assessment fall outside of an urban area within the Eastern Cape. Portions of the property have been identified as BLMC1 and BLMC2 in terms of the ECBCP. Portions of the proposed development area are located approximately 200m</p>

<i>terms of NEMPAA or from the core area of a biosphere reserve; (ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined;</i>	<i>NEMPAA or from the core area of a biosphere reserve; (ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; or</i>	from the nearest boundary of the Addo Elephant National Park. This listed activity therefore requires environmental authorisation.
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1.2 DURATION OF AUTHORISATION

Should an Environmental Authorisation be issued in respect of the project, the duration of the authorisation will be indicated in said document.

1.3 ENVIRONMENTAL MANAGEMENT PROGRAMMES

Environmental Management Programmes (EMPr), or Environmental Management Frameworks (EMF), serve to ensure that environmental impacts associated with particular activities are monitored, minimised and mitigated for the duration of the project. The practical management measures that should be employed to achieve monitoring and mitigation targets are detailed in the EMPr (DEAT 2004). The EMPr is a dynamic document which should be updated and reviewed on a regular basis so that it may be adapted to changing management styles, and to include improved impact mitigation technology as well as unforeseen environmental impacts. The EMPr should also be adapted if any changes are made to the project. If such changes will result in significant environmental impacts, which differ from those for which DEDEAT has granted authorisation, such changes must be submitted to the DEDEAT for approval before they are implemented.

This EMPr includes, but is not limited to, the environmental impacts identified in the Environmental Impact Assessment Report and the proposed mitigation measures that must be employed to minimise the harmful effects that those impacts may have on the environment.

The EIA Report contains a comprehensive description of the project and the receiving environment (Chapters 2 & 3), and should be read in conjunction with this EMPr. The lead author of the EMPr is Sandy Wren of Public Process consultants. Please refer to Appendix A of the EIA Report for a CV for Sandy Wren, outlining the experience and key competencies of the lead author.

In addition to a summary of the impacts, the EMPr contains more detailed information on the following:

- the manner in which mitigation will be implemented
- the scheduling of the implementation of mitigation
- responsibility and accountability for mitigation actions
- monitoring and reporting procedures

The life of the agricultural development can be broadly divided into three phases:

A **construction phase** - which includes all the surveying, land clearing, and construction activities associated with the establishment of the infrastructure (water supply infrastructure and access roads) and preparation of the site before it can begin operating.

An **operational phase** - which constitutes the day to day operation of the site for the duration of its lifetime until it is discontinued / decommissioned. This would include the planting, cultivation and harvesting of crops on the site.

A **decommissioning phase** - which includes all the activities associated with the cessation of the described activity at the site. It is not anticipated that the development will be decommissioned, simply because it will be a cultivated farm land.

Environmental impacts, management practices and mitigation measures may differ for different phases of the development; however some impacts will be present in all phases of the development, resulting in some repetition in the EMPr.

The EMPr report must be read in conjunction with the Environmental Impact Assessment Report and Environmental Authorisation as these documents may contain additional, detailed information not included in this report.

1.4 LEGAL REQUIREMENTS

This Environmental Management Programme does not include all the legislative and regulatory requirements applicable to the development. The representative appointed by the applicant to manage the operation, and the persons responsible for the implementation of the EMPr, must also familiarise themselves with the specific legal requirements applicable to the described activities on site. These may include, but are not limited to:

- Applicable Environmental Law
- Atmospheric Pollution Prevention Act 45 of 1965
- Conditions of Employment Act, 75 of 1997
- Conservation of Agricultural Resources Act 43 of 1983
- Constitution of South Africa No 108 of 1996
- Environment Conservation Act 73 of 1989
- Extension of Security of Tenure Act 62 of 1997
- Hazardous Substances Act 15 of 1973
- Health Act No 63 of 1977
- Labour Relations Act 66 of 1995
- Land Reform (Labour Tenants) Act 3 of 1996
- National Building Regulations and Building Standards Act 103 of 1977
- National Environmental Management : Biodiversity Act 10 of 2004
- National Environmental Management Act 107 of 1998
- National Environmental Management: Air Quality Act 39 of 2004
- National Heritage Resources Act 25 of 1999
- National Road Traffic Act 93 of 1996 – GNR 225 of 17 May 2000
- National Veld and Forest Fire Act 101 of 1998
- National Water Act 36 of 1998
- Nature Conservation Ordinance Act 19 of 1974
- Noise Control Regulations GN R 154 in Government Gazette No. 13717 of 10 January 1992
- Occupational Health and Safety Act of 1994
- The Hazardous Substances Act 115 of 1973
- Local bylaws
- Provincial legislation

PART A: CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (CEMP_r)

**Langbos Citrus, Sundays River Valley Municipality
(DEDEAT Reference Number: EC06/C/LN2/M/51-2014)**



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Part A CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (CEMPr)

The vegetation clearing and land preparation associated with the proposed establishment of citrus orchards is anticipated to be undertaken in three phases as follows:

- Phase 1: Clearance of ~37ha of vegetation on Portion 343 of Farm 113 for the establishment of ~34ha of citrus orchards.
- Phase 2: Clearance of ~94ha of vegetation on Portion 276 of Farm 113 for the establishment of ~82ha of citrus orchards.
- Phase 3: Clearance of ~113ha of vegetation on Portion 276 of Farm 113 for the establishment of ~104ha of citrus orchards.

During the construction phases, land will be cleared of vegetation and prepared for the establishment of citrus orchards. This will include the establishment of a new irrigation dam, water supply infrastructure, as well as the establishment of internal access roads. It will also entail the levelling and landscaping of the site to provide runoff control, as well as the planting of windbreaks within the plantation.

The vegetation clearing and site preparation phase will take place with the aid of a labour force on site, and with the aid of heavy earth moving machinery.

Environmental impacts associated with the vegetation clearing and site preparation phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the Environmental Impact Assessment Report.

A.1 MANAGEMENT ACTIONS

The management actions outlined below indicate the actions to be taken to minimise the potential negative impacts that this phase may have on the environment, as well as measures to enhance the potential benefits.

IMPACT	MITIGATION
Ecology	
Loss of vegetation due to clearing	<ul style="list-style-type: none"> • Adopt the Biodiversity No-Go Areas in Chapter 6, Section 9.2, Figure 16. • Highly recommended that the north-eastern portion of Farm Vellore Outspan is protected either formally or informally as a botanical reserve, and that it is appropriately managed for this purpose. • Consider the maintenance of indigenous strips of vegetation between orchard blocks, parallel to contours, especially on sloped areas. • Plant indigenous windbreaks. According to the applicant, the windbreak is required to be 20m high. Given this height requirement, most of the potential indigenous species tend to grow in moister regions and will likely require additional irrigation water to establish and reach maximum height. • If necessary (as this should be avoided if bullet one is adopted), rehabilitation of disturbed areas post establishment, with indigenous species. Indigenous trees could potentially be purchased and planted in the disturbed areas, while immature trees can be translocated from the clearing process. <i>Portulacaria afra</i> and <i>Aloes</i> will be easier to transplant and should be used. • Control and management of alien invasive plants, such as <i>Opuntia ficus-indica</i>. • Audit reporting by the Environmental Control Officer during construction/ clearing of orchard areas. • Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.
Loss of CBAs due to clearing	<ul style="list-style-type: none"> • The loss of CBA cannot be avoided in the proposed cultivation areas. • The compromise for the loss of remaining near-natural CBA is to possibly: <ul style="list-style-type: none"> - Adopt the Biodiversity No-Go Areas indicated in Chapter 6, Section 6.9.2, Figure 6.16 of the EIA Report, which ensures that the northern portions of the farm are maintained as near-natural cover for conservation purposed, which is higher than the biodiversity target for Sundays (Spekboom) Thicket. - It is highly recommended that the north-eastern portion of Farm Vellore Outspan is protected, either formally or informally, as a botanical reserve, and that it is appropriately managed for this purpose.

Loss of SSC due to clearing	<ul style="list-style-type: none"> • The rare <i>Duvalia pillansii</i> should be avoided, as per the proposed layout. The Environmental Control Officer, along with the Farm Manager, Mr Botha, should also be on the lookout for any plants or other species, particularly in the dwarf shrubland, which occurs in the phase 2 cultivation area. • It is highly recommended that the north-eastern portion of Farm Vellore Outspan is protected, either formally or informally, as a botanical reserve, and that it is appropriately managed for this purpose. • It is advised that <i>Drimia altissima</i> bulbs be transplanted elsewhere on the farm, since some areas outside the proposed agricultural development are suitable for the relocation of <i>Drimia altissima</i>. • License applications/ permits for the removal of protected species should be obtained from the Department of Economic Development, Environmental Affairs and Tourism and the Department of Agriculture, Forestry and Fisheries. • Translocate as many succulent species as reasonably possible. It should be noted that some of the species are pioneers which establish very easily where disturbance has occurred, especially <i>Drosanthemum hispidum</i> and <i>Delosperma</i> species. Focus should therefore be on the <i>Aloes</i> and other vygies. • Numerous <i>Sideroxylon inerme</i> (Milkwood trees) occur on site. Large trees do not transplant well. An attempt to translocate smaller, immature trees is encouraged; or alternatively purchase a percentage (to be determined by the Department of Forestry) of these and plant on the farm. Note that areas outside the proposed agricultural development are suitable for transplantation. • Rehabilitation of disturbed areas with the abovementioned species, as soon as possible. • Audit reporting by the Environmental Control Officer during the entire construction phase/ preparation and establishment.
Increased stormwater runoff due to the removal of the vegetation	<ul style="list-style-type: none"> • Limit vegetation disturbance outside the portions to be cleared. • Stormwater on the site must be controlled for the duration of the site preparation phase by employing appropriate temporary stormwater control structures e.g. cut-off berms. • Cleared areas must be re-vegetated (cultivated) as soon as possible after the initial vegetation clearing. • The site should be landscaped to allow for overland flow towards the drainage line which runs along the length of the site.

	<ul style="list-style-type: none"> • Design and construct the main access road and hardstand area of the Logistical Services Area to accommodate storm water sheet flow in accordance with the natural topography as far as practical possible. • The geometric design of the hardstand area shall be designed to direct its sheet flow to the vegetated area west of the Logistical Services Area to drain perpendicular with the natural contours in a natural way to the lower-lying areas. • Avoid the construction of solid boundary walls as far as possible to avoid the concentration of storm water. • Erosion protection measures consisting of semi-rigid Gabion/Reno mattress/geo-textile structures and establishment of effective ground cover shall be used subject to practical design considerations in areas where concentrated storm water could cause erosion
Aquatic	
Potential chemical pollution of surface and groundwater	<ul style="list-style-type: none"> • Maintain 15m aquatic buffers around the watercourse and associated dam wetland habitats. • Refer to impacts above, particularly the maintenance of natural indigenous vegetation towards the north, which would drain towards the Coerney River, where the topography would direct run-off. • Consider the possibility of natural indigenous vegetation strips between the orchards at reasonable intervals, especially on the steeper sloped areas. • As an additional precautionary measure, a shallow trench could be placed along access tracks, to trap surface run-off (containing fertilizer and herbicide substances). Ideally these should be grassed (indigenous) for absorption of chemicals. • Fertilizer applications should be used at the right time and at the required rates (i.e. excess fertilization can increase available nitrogen or phosphates entering aquatic features). • Use of slow release nitrogen fertilizers are encouraged as this can improve nitrogen efficiency and reduce leaching of nitrogen. • The use of organic fertilizers and mulching is encouraged, as much as possible. • Strict use and management of potential sources of chemical pollution (e.g. pesticides, fertilizers, hydrocarbons from vehicles and machinery, etc.) i.e. waste management procedures. • Chemical pesticides and insecticides used should be the safest and least harmful to the environment. Biodegradable products should be used as far as possible.

	<ul style="list-style-type: none"> • Chemical application by the applicant via handgun and mist blowers should preferably not be undertaken during high wind periods. This is also recommended for aerial applications by the Co-op. • Avoid over irrigation. Drip irrigation is encouraged (as is the standard practice for citrus cultivation). • Chemicals and hazardous waste storage areas should be in storage buildings. • Hazardous and chemical wastes (includes old containers) should be disposed of at registered landfill sites. • Plant indigenous windbreaks along the R334 boundary, which is adjacent to the Greater Addo Elephant National Park to minimize chemical drift. See Impact 1 in Chapter 6, Section 6.11.2.1, for potential indigenous species. • Audit reporting by the Environmental Control Officer during site establishment (to avoid buffer areas).
Potential sedimentation and erosional impacts	<ul style="list-style-type: none"> • As per impacts above, where relevant (but especially buffers and maintaining natural cover).
Loss of watercourse and drainage areas with associated wetland habitat	<ul style="list-style-type: none"> • A 15m buffer is recommended around the watercourse. Refer Chapter 6, Section 9 for the buffer associated with the aquatic areas / hydrological process areas. A 15m rather than a 10m was recommended, as this is Critical Biodiversity Area, although an ephemeral system. • The 15m buffer should commence from the top of the banks and/or steep slopes where the watercourse is defined, northwards of dam wetland habitat 3 (See Chapter 6). • The 15m buffer should commence from the centre line where the watercourse is undefined, southwards of dam wetland habitat 3 (See Chapter 6). • The 15m watercourse buffer will therefore apply to the dam wetland habitats along the watercourse. (Buffers do not apply to the dams with no wetland habitat, and the artificially created wetland no. 6 (See Chapter 6)). • Minimize the number of access tracks crossing the undefined drainage area, southwards of dam wetland habitat 3 (See Chapter 6). Possibly utilize the existing access tracks. • Access tracks should not be permitted across the defined watercourse reach, northwards of dam wetland habitat 3 (See Chapter 6). • Audit reporting by the Environmental Control Officer during construction / clearing of orchard areas. • Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.

Socio-economic	
Dust generation during the vegetation clearing and site preparation phase	<ul style="list-style-type: none"> • Vegetation must be cleared in a phased manner to avoid large areas of unconsolidated soils. • Topsoil and soil stockpiles must be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation. • A water cart or sufficient watering equipment must be available to wet soils during windy days if wind-blown sand and dust becomes a problem.
Noise and disturbance during the vegetation clearing and site preparation phase	<ul style="list-style-type: none"> • Limit activities, as far as possible, to working hours (i.e. 7am-6pm weekdays). • Encourage labourers to not make unnecessary noise. • Signage with the contact details of the responsible person must be provided at the site for residents with complaints in this regard. • A complaints register must be kept to document complaints and the corrective action taken. • No loud music to be allowed on site.
A number of temporary employment and skills development opportunities will be created during the site clearing and preparation phase	<ul style="list-style-type: none"> • Local labour must be sourced as far as possible to maximise the economic benefits for the local community.
Risk to human health and safety due to open excavations and earth moving machinery	<ul style="list-style-type: none"> • Footprints, including site offices, excavations, storage areas, materials lay-down areas, stockpile area, and labourers rest areas must be clearly demarcated or fenced off before site preparation and vegetation clearing commences. • All activities must be limited to the demarcated area. • Open excavations must be kept free of water. • Access to the site must be controlled. • Entry points and access routes to the site must be clearly marked and traffic limited to those areas as far as possible. • Speed travelled by vehicles must be kept to a minimum and speed limits enforced. • Ensure that there is a first aid facility and trained first aiders permanently on site.
Runaway bush fires	<ul style="list-style-type: none"> • Exotic tree and shrub species at the site must be eradicated and the litter removed from site. • No open fires should be allowed on the site, except in a designated controlled area.

	<ul style="list-style-type: none"> • Suitable firefighting equipment should be available on site.
Waste	
Generation of waste during the vegetation clearing and site preparation phase.	<ul style="list-style-type: none"> • No waste from construction or otherwise, may be disposed of on site. • No waste should be stored on site. • Waste generated at the site should be minimised by reusing and recycling, as far as possible. • All waste that cannot be reused or recycled must be sorted at site before being suitably disposed of at an appropriately licensed and registered waste disposal facility. • Hazardous waste generated at the site should be disposed of at a suitably licensed hazardous waste disposal facility. • Adequate litter drums or other suitable containers must be located on site to ensure that waste generated on site is disposed of in a suitable and timeous manner. • Suitable potable sanitation facilities must be provided and maintained for the labourers during the vegetation clearing and site preparation phase.
Heritage	
Impacts on pre-colonial archaeology	<ul style="list-style-type: none"> • No mitigation is proposed for the property before construction starts because the archaeological remains (if any) are of low significance (excluding human remains). • However, the ECO (must be trained) must monitor the clearing of the vegetation and if concentrations of archaeological materials and/or human remains are exposed then all work must stop for an archaeologist to investigate (see below). <ul style="list-style-type: none"> - An archaeologist should conduct a walkthrough of the area after the vegetation is cleared to check if any significant sites/materials were exposed. Further recommendations will follow from the investigation. - If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease in the immediate area of the finds and it must be reported immediately to the archaeologist at the Albany Museum (Tel. 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel. 043 6422811). Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation.

Impacts on cultural landscape	<ul style="list-style-type: none"> No mitigation is proposed for the property before construction starts because the visual impact of the development on the pre-colonial and historical cultural landscape will be low. However, should significant cultural remains/features be exposed during the clearing of vegetation, i.e. graves, a full mitigation process must take place.
Discovery or exposure of any substantial fossil remains (e.g. vertebrate bones and teeth, large blocks of petrified wood, marine shells) during the construction phase	<ul style="list-style-type: none"> Should fossil remains be discovered during construction, these should be safeguarded (preferably <i>in situ</i>) and the ECO should alert the Eastern Cape Provincial Heritage Resources Authority (ECPHRA). Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; Email: smokhanya@ecphra.org.zaso) so that appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist.
Traffic	
Traffic safety due to slow moving traffic	<ul style="list-style-type: none"> Additional warning signage should be erected.
Traffic safety due to additional traffic	<ul style="list-style-type: none"> Additional warning signage should be erected.
Visual	
Lighting	<ul style="list-style-type: none"> LSA and other permanent structures should, where practical, be situated off ridgelines so as to minimise the view catchment of the lighting, especially during night time. All lighting should be fitted with deflectors to avoid light spillage and minimise visual impact of lights at night. The developer should specifically plan the type, placement and direction of lighting to ensure that light pollution is minimised, especially towards the east.
Visual Intrusion in the Landscape	<ul style="list-style-type: none"> Maintain a buffer consisting of natural vegetation approximately 10m wide, where there is existing vegetation along the R342. This will help reduce the visual scarring during the clearing phase especially for road users. The buffer may be removed during the final stages of setup.
<u>Eskom Servitude</u>	
<u>Eskom infrastructure within the servitude is at risk of damage during vegetation clearing and site preparation.</u>	<ul style="list-style-type: none"> <u>The following restrictions apply to the development with regards to Eskom infrastructure:</u> <ul style="list-style-type: none"> No windbreaks to be planted within 20 meters from the centre line of each of the servitudes on the property

	<ul style="list-style-type: none">○ <u>Citrus orchards can be planted within the servitudes as well as the construction of vehicles tracks of 4 meters wide between the orchards, however there must be a buffer of 5 meters either side of the base structures of all the pylons as well as the stays on the site.</u>● <u>Prior to vegetation clearing commencing the buffer areas indicated above are to be physically demarcated on site to ensure no trees are planted within the buffer areas.</u>
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A.2 ROLES AND RESPONSIBILITIES

The ultimate responsibility for the effective implementation of the EMPr lies with the applicant (holder of Authorisation), in this case BF Joubert Familie Trust. Responsibility may be delegated to project managers, construction managers or environmental officers appointed by the applicant during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

The applicant will appoint a project manager for the construction phase of the proposed development. The project manager will be responsible for the *implementation of the EMPr* during the construction phase of the development.

An independent Environmental Control Officer (ECO) should be appointed to oversee the implementation of the EMPr during the Construction phase of the project. The ECO will be responsible for overseeing the implementation of, and monitoring compliance with, the conditions set out in the Environmental Authorisation (EA), as well as the Construction Environmental Management Programme (CEMPr). This monitoring role may be supplemented by an internal Environmental Officer or Site Officer that will remain on site during the construction phase.

Table 1. Hierarchy of responsibility in the implementation of the EMPr.

<p>Project manager</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Overall responsibility for management of the development. • Is familiar with the contents of the Environmental Impact Assessment (EIA), Environmental Management Programme (EMP) and the conditions of the Environmental Authorisation (EA). • Ensures that policy, legislative and relevant environmental documentation is available to the construction manager. • Liaises with construction / site manager on a regular basis to address any environmental issues (compliance, mitigation, disciplinary action) that may arise.
<p>Construction / Site Manager</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Selects and appoints contractors. • Is familiar with the institutional environmental policies and Codes of Practice. • Is familiar with the EIA, EMP, EA, and relevant legislation. • Ensures that the information in the EIA, EMP, EA, and relevant legislation is communicated to contractors. • Ensures that contractors are familiar with institutional Codes of Conduct for contractors. • Ensure that environmental policies, legislation and guidelines are adhered to. • Monitor implementation of the EMP by conducting regular site visits and meetings.
<p>Environmental Control Officer</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Responsible for <u>overseeing and monitoring</u> the <i>implementation of the EMPr</i> during the construction phase. • Is familiar with the EIA, EMP, EA, and relevant legislation. • Monitors compliance with the EMP during the operational phase through annual environmental audits. • Report non-compliance or appropriate remedial action.
<p>Site Manager / Environmental Officer</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Is familiar with the EIA, EMP, EA, and relevant legislative requirements. • Ensures compliance with the EMP and EA conditions. • Is familiar with and ensure compliance with the relevant internal institutional policy, and procedural guidelines • Ensures compliance with the relevant institutional policy, and procedural guidelines • Ensures compliance with the legislative requirements.

	<ul style="list-style-type: none"> • Implements the EMP during the operational phase of the development by employing prescribed mitigation and management measures. • Conducts environmental monitoring protocols at the facility. • Conducts regular inspections of the facility in order to monitor compliance with the EMP. • Takes remedial or disciplinary action where required.
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Should ownership of the project change, any Environmental Authorisation granted in respect of the development must be transferred to the new owner, upon notification of the Department (DEDEAT). The EMP, EA and Conditions of Approval remain binding on the new owner / operator of the development.

A.3 ENVIRONMENTAL PERFORMANCE MONITORING

Environmental Performance Monitoring has been defined as the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions must initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or affected parties.

A.3.1 Baseline data

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared.

The following baseline information, where currently not available, must be obtained before vegetation clearing and site preparation commences:

- Surface water quality from the water bodies on site.
- Extent and location of alien invasive plants on site.
- Extent and location of erosion features on site.
- Extent and location of water bodies on site.
- Delineation of the No-Go Areas (including aquatic and Eskom buffers)

Collection of baseline information will ultimately be the responsibility of the applicant. However, these tasks can be delegated to the ECO or Site Officer.

A.3.2 Affected parties

Neighbours and parties affected by the development must be afforded opportunity to comment on problems and impacts that they may experience as a result of the development during the construction phase of the project. A complaints register must be kept which details such comments, as well as the intervention initiated to address the comment or complaint, where appropriate. These comments will be used to adapt and improve existing mitigation measures.

A.3.3 Monitoring

During the vegetation clearing and site preparation phase the following must be monitored:

- Monthly monitoring of the compliance with the conditions of approval as given in the environmental authorisation as well as the recommendations contained in the EMP.
- Monthly monitoring of the extent and location of alien invasive plants on the site.
- Monthly monitoring of the extent and location of erosion around the development footprints.
- Monthly monitoring of the surface water quality of drainage lines on site or when surface water is flowing in the drainage lines.

- Monthly conducting of environmental awareness training sessions with the labourers
- Monthly monitoring of the fence line adjacent to the orchards for snares.

Information gathered during monitoring exercises, as well as the action taken, or operational adjustments made; must be recorded and these reports made available at the request of the Department.

A.4 LEGAL ENFORCEABILITY

This EMPr is likely to be a condition of the Environmental Authorisation, should authorisation for the activity be granted. As such it is a legally binding agreement between the applicant, as well as all his / her sub-contractors, and the Department. The EMPr must be included in the contracts (tender documents or otherwise) entered into by the owner / developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMPr. Should it be found that additional codes of conduct for contractors need to be included in this EMPr, this must be done at the first review opportunity.

A.5 IMPLEMENTATION SCHEDULE AND REPORTING

The management measures outlined for the Construction Phase of the development will take effect as soon as vegetation clearing and site preparation on the site is initiated, while the collection of baseline monitoring information must start prior to the commencement of construction activities.

Water quality monitoring, erosion monitoring, alien plant management and stakeholder input reports will be kept as outlined in Section A.3.3 above, and be made available at the request of the Department.

Environmental audit reports as well as reviewed amended EMPr reports will be kept up to date so that they can be made available at the request of the Department.

A.6 AUDIT PROCEDURE & EMPR REVIEW SCHEDULE

The environmental audit is systematic, objective investigation of the environmental information of a development to determine to what extent they conform to the environmental standards set out in the EMPr and Environmental Authorisation.

During the construction phase the audit reports as produced by the Environmental Control Officer (ECO) after periodic (monthly) site visits will serve as the auditing mechanism. A schedule for site audits in the construction phase must be agreed upon during the appointment of the ECO. The ECO must comment on environmental impacts that are not adequately mitigated, as well as mitigation measures that are not effective, and suggest appropriate further management actions. These comments must be included in an amended CEMPr (Construction Phase EMPr) that must be made available to the Department on request.

A.7 ENVIRONMENTAL EDUCATION

Environmental education must be provided as part of the environmental induction process for the labourers that will be employed on site prior to the commencement of the vegetation clearing and site preparation processes at the site. The key requirements of the EIR, EMP and Environmental Authorisation will be included in the material which is presented to personnel during the formal Environmental Induction process.

- Environmental Induction will be facilitated by the Site Environmental Officer, or Site Manager if no SEM is appointed for the site.
- No personnel will be allowed to work at the site without having passed through the environmental induction process.
- Labourers will be updated continually on pertinent Environmental and Safety issues during weekly Toolbox Talks by the SEM or Site Manager/Farm Manager.
- Appropriate signage will be used to inform personnel of environmental conduct in specific areas.

Environmental induction training must include at a minimum:

- Designation of No-Go areas, workers rest areas, and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.
- Procedures to be followed if heritage artefacts are discovered.
- Procedures to be followed if wild fauna are encountered.

A.8 REFERENCES

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.

PART B: OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (OEMPr)

**Langbos Citrus, Sundays River Valley Municipality
(DEDEAT Reference Number: EC06/C/LN2/M/51-2014)**



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Part B OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (OEMPr)

During its Operational Phase the site will be under cultivation. This will include the planting, cultivation and harvesting of citrus.

Potential negative impacts associated with the operational phase are limited mainly to impacts on the local resources and infrastructure associated therewith, as well as, the natural resources (vegetation and soil).

Environmental impacts associated with the operational phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the Environmental Impact Assessment Report.

B.1 MANAGEMENT ACTIONS

The management actions outlined below indicate the actions to be taken to minimise the potential negative impacts that the operation of the development may have on the environment, as well as measures to enhance the potential benefits.

Impact	Mitigation
Ecology	
Maintenance of remaining intact vegetation	<ul style="list-style-type: none"> • Adopt the Biodiversity No-Go Areas in Chapter 6, Section 6.9.2, Figure 6.16. • Highly recommended that the north-eastern portion of Farm Vellore Outspan is protected either formally or informally as a botanical reserve, and that it is appropriately managed for this purpose. • Consider the maintenance of indigenous strips of vegetation between orchard blocks, parallel to contours, especially on sloped areas. • If necessary (as this should be avoided if bullet one is adopted), rehabilitation of disturbed areas post establishment, with indigenous species. Indigenous trees could potentially be purchased and planted in the disturbed areas, while immature trees can be translocated from the clearing process. <i>Portulacaria afra</i> and <i>Aloes</i> will be easier to transplant and should be used. • Control and management of alien invasive plants, such as <i>Opuntia ficus-indica</i>. • Audit reporting by the Environmental Control Officer during construction/ clearing of orchard areas. • Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.
Maintaining remaining CBAs	<ul style="list-style-type: none"> • Adopt the Biodiversity No-Go Areas indicated in Chapter 6, Section 6.9.2, Figure 6.16, which ensures that the northern portions of the farm are maintained as near-natural cover for conservation purposes, which is higher than the biodiversity target for Sundays (Spekboom) Thicket. • It is highly recommended that the north-eastern portion of Farm Vellore Outspan is protected, either formally or informally, as a botanical reserve, and that it is appropriately managed for this purpose.
Increased storm water runoff due to vegetation clearing	<ul style="list-style-type: none"> • Maintain vegetation outside the portions cleared. • Cleared areas must be re-vegetated (cultivated) as soon as possible after the initial vegetation clearing. • The site should be landscaped to allow for overland flow towards the drainage line which runs along the length of the site. • Design and construct the main access road and hardstand area of the Logistical Services Area to accommodate storm water sheet flow in accordance with the natural topography as far as practical possible.

	<ul style="list-style-type: none"> • The geometric design of the hardstand area shall be designed to direct its sheet flow to the vegetated area west of the Logistical Services Area to drain perpendicular with the natural contours in a natural way to the lower-lying areas. • Erosion protection measures consisting of semi-rigid Gabion/Reno mattress/geo-textile structures and establishment of effective ground cover shall be used subject to practical design considerations in areas where concentrated storm water could cause erosion. • Retain vegetative cover of the soil surface for as long as possible between tilling / planting operations. • Design and implement a stormwater management system for the site to be implemented for the operational lifespan thereof, especially along access roads and internal vehicle tracks. • Make judicious use of appropriate runoff control measures (e.g. cut-off berms, contour ploughing, shaping) to reduce sheet-flow and concomitant soil erosion. • Monitor the site for erosion on a regular basis and take corrective action immediately if detected. • Landscaping and erosion control measures must be implemented on steep portions of the site that may be sensitive to erosion.
Loss of SCC due to vegetation clearing	<ul style="list-style-type: none"> • The rare <i>Duvalia pillansii</i> should be avoided, as per the proposed layout. The Environmental Control Officer, along with the Farm Manager, Mr Botha, should also be on the lookout for any plants or other species, particularly in the dwarf shrubland, which occurs in the phase 2 cultivation area. • It is highly recommended that the north-eastern portion of Farm Vellore Outspan is protected, either formally or informally, as a botanical reserve, and that it is appropriately managed for this purpose. • It is advised that <i>Drimia altissima</i> bulbs be transplanted elsewhere on the farm, since some areas outside the proposed agricultural development are suitable for the relocation of <i>Drimia altissima</i>. • License applications/ permits for the removal of protected species should be obtained from the Department of Economic Development, Environmental Affairs and Tourism and the Department of Agriculture, Forestry and Fisheries. • Translocate as many succulent species as reasonably possible. It should be noted that some of the species are pioneers which establish very easily where disturbance has occurred, especially <i>Drosanthemum hispidum</i> and <i>Delosperma</i> species. Focus should therefore be on the <i>Aloes</i> and other vygies. • Numerous <i>Sideroxylon inerme</i> (Milkwood trees) occur on site. Large trees do not transplant well. An attempt to translocate smaller, immature trees is encouraged; or alternatively purchase a percentage (to

	<p>be determined by the Department of Forestry) of these and plant on the farm. Note that areas outside the proposed agricultural development are suitable for transplantation.</p> <ul style="list-style-type: none"> • Rehabilitation of disturbed areas with the abovementioned species, as soon as possible. • Audit reporting by the Environmental Control Officer during the entire construction phase/ preparation and establishment.
<p>Aquatic Features</p>	
<p>Loss of watercourse and drainage areas with associated wetland habitat</p>	<ul style="list-style-type: none"> • A 15m buffer is recommended around the watercourse. Refer Chapter 6, Section 9 for the buffer associated with the aquatic areas / hydrological process areas. A 15m rather than a 10m was recommended, as this is Critical Biodiversity Area, although an ephemeral system. • The 15m buffer should commence from the top of the banks and/or steep slopes where the watercourse is defined, northwards of dam wetland habitat 3 (See Chapter 6). • The 15m buffer should commence from the centre line where the watercourse is undefined, southwards of dam wetland habitat 3 (See Chapter 6). • The 15m watercourse buffer will therefore apply to the dam wetland habitats along the watercourse. (Buffers do not apply to the dams with no wetland habitat, and the artificially created wetland no. 6 (See Chapter 6)). • Minimize the number of access tracks crossing the undefined drainage area, southwards of dam wetland habitat 3 (See Chapter 6). Possibly utilize the existing access tracks. • Access tracks should not be permitted across the defined watercourse reach, northwards of dam wetland habitat 3 (See Chapter 6). • Audit reporting by the Environmental Control Officer during construction / clearing of orchard areas. • Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable
<p>Chemical pollution of surface water and groundwater</p>	<ul style="list-style-type: none"> • Maintain 15m aquatic buffers around the watercourse and associated dam wetland habitats. • Maintenance of natural indigenous vegetation towards the north, which would drain towards the Coerney River, where the topography would direct run-off. • Consider the possibility of natural indigenous vegetation strips between the orchards at reasonable intervals, especially on the steeper sloped areas.

	<ul style="list-style-type: none"> • As an additional precautionary measure, a shallow trench could be placed along access tracks, to trap surface run-off (containing fertilizer and herbicide substances). Ideally these should be grassed (indigenous) for absorption of chemicals. • Fertilizer applications should be used at the right time and at the required rates (i.e. excess fertilization can increase available nitrogen or phosphates entering aquatic features). • Use of slow release nitrogen fertilizers are encouraged as this can improve nitrogen efficiency and reduce leaching of nitrogen. • The use of organic fertilizers and mulching is encouraged, as much as possible. • Strict use and management of potential sources of chemical pollution (e.g. pesticides, fertilizers, hydrocarbons from vehicles and machinery, etc.) i.e. waste management procedures. • Chemical pesticides and insecticides used should be the safest and least harmful to the environment. Biodegradable products should be used as far as possible. • Chemical application by the applicant via handgun and mist blowers should preferably not be undertaken during high wind periods. This is also recommended for aerial applications by the Co-op. • Avoid over irrigation. Drip irrigation is encouraged (as is the standard practice for citrus cultivation). • Chemicals and hazardous waste storage areas should be in storage buildings. • Hazardous and chemical wastes (includes old containers) should be disposed of at registered landfill sites. • Plant indigenous windbreaks along the R334 boundary, which is adjacent to the Greater Addo Elephant National Park to minimize chemical drift. See Impact 1 in Chapter 6, Section 11.2.1, for potential indigenous species. • Audit reporting by the Environmental Control Officer during site establishment (to avoid buffer areas).
Socio-Economic	
Increased employment opportunities.	<ul style="list-style-type: none"> • Use local labour as far as possible.
Visual	
Lighting	<ul style="list-style-type: none"> • LSA and other permanent structures should, where practical, be situated off ridgelines so as to minimise the view catchment of the lighting, especially during night time. • All lighting should be fitted with deflectors to avoid light spillage and minimise visual impact of lights at night. The developer should specifically plan the type, placement and direction of lighting to ensure that light pollution is minimised, especially towards the east.

B.2 ROLES AND RESPONSIBILITIES

The ultimate responsibility for the effective implementation of the EMPr lies with the applicant (owner / developer) of the property at the time of the initiation of development, who, in this case would be BF Joubert Familie Trust. Responsibility may be delegated to environmental officers, or (farm / project) managers representing contractors or the proponent on the site during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

During the operational phase of the development the implementation of the Operational Phase Environmental Management Programme (OEMPr) and the conditions of the EA, as well as environmental compliance monitoring, will be the responsibility of an internal Environmental Officer or a Manager appointed by BF Joubert Familie Trust.

Should ownership of the project change, any Environmental Authorisation granted in respect of the development must be transferred to the new owner, upon notification of the Department (DEDEAT). The EMPr, EA and Conditions of Approval remain binding on the new owner / operator of the development.

B.3 ENVIRONMENTAL PERFORMANCE MONITORING

Environmental Performance Monitoring has been defined as the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions must initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or affected parties.

B.3.1 Baseline data

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared.

Baseline data gathered prior to commencement of the vegetation clearing and site preparation phase will be used to compare environmental conditions on the site during the operational phase of the development to past (predevelopment) conditions.

B.3.2 Affected parties

Neighbours and parties affected by the development must be afforded opportunity to comment on problems and impacts that they may experience as a result of the development during the operational phase of the project. A complaints register must be kept which details such comments, as well as the intervention initiated to address the comment or complaint, where appropriate. These comments will be used to adapt and improve existing mitigation measures.

B.3.3 Monitoring

Once the facility becomes operational the following must be monitored:

- Bi-Annual monitoring of surface water quality from the water bodies on site.
- Annual monitoring of the extent and location of alien invasive plants within the intact vegetation on site.

- Quarterly monitoring of the extent and location of erosion features on site (or after heavy rainfall events).

Information gathered during monitoring exercises, as well as the action taken, or operational adjustments made; must be recorded and these reports made available at the request of the Department.

It is anticipated that the person responsible for the implementation of the OEMP will also be responsible for environmental monitoring and record keeping for the duration of the project lifetime.

B.4 LEGAL ENFORCEABILITY

This EMP is likely to be a condition of the Environmental Authorisation, should authorisation for the activity be granted. As such it is a legally binding agreement between the applicant, as well as all his / her sub-contractors, and the Department. The EMP must be included in the contracts (tender documents or otherwise) entered into by the owner / developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMP. Should it be found that additional codes of conduct for contractors need to be included in this EMP, this must be done at the first review opportunity.

B.5 IMPLEMENTATION SCHEDULE AND REPORTING

The management measures outlined for the Operational Phase of the development will take effect as soon as the facility becomes operational (ie. Once the dam is built and the orchards are planted).

Water quality monitoring, erosion monitoring, alien plant management and stakeholder input reports will be kept as outlined in Section B.3.3 above, and be made available at the request of the Department.

Environmental audit reports as well as reviewed amended EMP reports will be kept up to date so that they can be made available at the request of the Department.

B.6 AUDIT PROCEDURE & EMP REVIEW SCHEDULE

Once the land is under cultivation the landowner must comply with all statutory legislation as well as all of the recommendations as set out in the Environmental Impact Assessment Report. An annual audit must be conducted by a suitably qualified independent environmental compliance auditor appointed by the landowner during the operational phase. These audits must assess the effectiveness of existing management and mitigation measures, and compliance with the OEMP and conditions of the EA. The findings of the audit reports must feed into the EMP ensuring that management and mitigation measures are adjusted and updated to ensure that impacts are managed effectively and efficiently. Audit reports must be made available to DEDEAT at the request of the Department.

B.7 ENVIRONMENTAL EDUCATION

Environmental education must be provided as part of the environmental induction process for the labourers that will be employed on site during the operational phase of the development.

- Environmental Induction will be facilitated by the Site Environmental Officer, or Site Manager if no SEM is appointed for the site.

- No personnel will be allowed to work at the site without having passed through the environmental induction process.
- Labourers will be updated continually on pertinent Environmental and Safety issues during weekly Toolbox Talks by the SEM or Site Manager/Farm Manager.
- Appropriate signage will be used to inform personnel of environmental conduct in specific areas.

Environmental induction training must include the relevant requirements of the Environmental Impact Assessment Report, EMPr and Environmental Authorisation, and must include at a minimum:

- Explanation of No-Go areas, workers rest areas, and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.
- Procedures to be followed if wild fauna are encountered.

Weekly toolbox talks must comment on environmental issues on which non-compliance has been noted during periodic audits.

B.8 References

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.